Space Weather Forecast

Issued on Wednesday 5 March 2025 at 12:43 Local

This forecast provides a four-day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales

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Space Weather Forecast Headline: M-class flares likely (Minor-Moderate radio blackouts) throughout. Minor/Moderate geomagnetic storm (G1/G2) Day 4.

Analysis of Space Weather Activity over past 24 hours

Solar Activity: Activity has been Moderate, with occasional Common class flares and a Moderate class flare.

The facing side of the Sun displays eleven sunspot regions. The largest region in the southeast is declining. Another region in the southeast is also showing an increase in complexity and caused the Moderate class flare.

No Earth-directed Coronal Mass Ejections (CMEs) were identified in available satellite imagery.

Solar Wind / Geomagnetic Activity: Solar winds are Slightly Elevated and now gradually declining. The Interplanetary Magnetic Field was at mostly Weak and the north-south component was rather variable and Weak. Around 04/1900UTC, a period of southward directed component was observed due to a glancing blow Coronal Mass Ejection (CME). The net result of the above solar wind measures was Quiet geomagnetic activity, becoming Unsettled to G1 minor storm between 04/1800UTC to 05/0600UTC.

Energetic Particles / Solar Radiation: No solar radiation storms were observed.

Four-Day Space Weather Forecast Summary

Solar Activity: Low to Moderate levels expected, with Moderate class flares likely.

Solar Wind / Geomagnetic Activity: There are no Earth-directed CMEs in the forecast. Slightly Elevated winds are expected to continue declining towards Background over coming days. On Day 4 (8 March) the next fast wind related to a coronal hole may reach Earth increasing the solar wind to Elevated to Strong. Geomagnetic activity is expected to be Quiet to Unsettled levels. On day 4 (8 March), periods of Active to G1/minor geomagnetic storm are likely with a chance of isolated G2/Moderate geomagnetic storm.

Energetic Particles / Solar Radiation: No solar radiation storms are expected.

Issued by Met Office Space Weather Advisor, Tel: +44 (0) 370 900 0100 Email: enquiries@metoffice.gov.uk

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Geomagnetic Storms

Geomagnetic Storm Probability (Exceedance)	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Minor or Moderate	G1 to G2	Yes	5	1	1	60
Strong	G3	No	1	1	1	1
Severe	G4	No	1	1	1	1
Extreme	G5	No	1	1	1	1

Radio Blackouts - X-Ray Flares

X-Ray Flares Probability	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	R1-R2 (M Class)	Yes	60	60	60	60
Very Active	R3-R5 (X Class)	No	5	5	5	5

Solar Radiation Storms (High Energy Protons)

Radiation Storms Probability (Exceedance)	Level ($cm^{-2}sr^{-1}s^{-1}$)	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	≥ S1	No	5	5	5	5
Very Active	≥ S3 *	No	1	1	1	1
* S3 ≥ 10 MeV ≥ 1000 pfu and/or 50 MeV ≥ 10pfu. (pfu = $cm^{-2}sr^{-1}s^{-1}$)						

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